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Original Communications.

ELECTRICAL TREATMENT OF UTERINE FIBROIDS, WITH ANSWERS TO OBJECTIONS AND CITATION OF NOVELTIES.*

By G. Apostoli, M.D., Paris, France.

Gentlemen,—Every therapeutical innovation which runs counter to prejudices and interests meets with opposition, and has to bear the brunt of hastily formed opinions. This has been the lot of my electrical treatment of uterine fibroids, and I am happy that it should be so, since frank and loyal controversy will bring light upon the subject and strengthen my position.

My first object to-day is to bring forward all the arguments that have been set up against my system, to reply to them, and show that this can be done with success In order to avoid personalities and to keep this discussion on a footing of scientific courtesy, I shall group these objections without regard to the source from which they come, and let my reply immediately follow the statement.

In the second part of my paper I propose to introduce to your notice some additions I have made to my therapeutical expedients, which will be regarded as of practical importance.

Part I.—Answers to Objections. 1. Criticisms of the Book of Dr. Carlet.—Many deprecatory remarks have been made upon the histories of my first hundred cases, as reported in the thesis of my assistant. I must notice them separately.

A. It is said that I have confusedly mixed up cases of simple subinvolution, or the enlargements of chronic metritis, with those of fibrous tumors. How could this possibly happen? since the greater part of the women had never been pregnant, and among the rest I had to deal with wombs of enormous size, some even rising above the umbilicus; besides, the most careful examination, both external and internal, combined with hysterometry, left no doubt in my mind as to the nature of the cases. But even supposing a mistake had been made in some rare cases, it could be no cause for regret, for it would only prove that two conditions, chronic metritis and fibrous tumors, equally refractory to ordinary management, are amenable to the same treatment.

B. Judging by the uterine measurements given in my book a large proportion of my cases have but slightly diminished.—It may be true that in many instances the uterine measurement has but little altered

*Paper read at the Congress of the British Medical Association, Glasgow. August 8, 1888.

The sound only gives information as to the uterine cavity. The greater part of fibroids, both subperitoneal and interstitial, may coexist with a nearly normal cavity, and consequently may and have undergone reduction without any appreciable modification of the depth marked by the sound. But independent of this question of anatomical change, variable according to the situation of the tumor, we have to look at that of the symptomatic cure, here the most important. For how often do we meet with considerable fibroids of which the bearers have no consciousness, while the lives of other women are put in peril by small and even the smallest tumors. What is it that brings women with fibroids to the consultation-room? Generally because they have pain or hemorrhage. Why are they operated on? Always for the same reason, to save them from the consequences of pain or hemorrhage. Cavil as much as you please about the importance of such anatomical reductions as I have obtained; but so far as concerns the symptomatic cure there can be no doubt, for I affirm that the greater number of my patients have been made and remain well. Is there any other known method of treating these affections of which so much can be said?

C. Many of the reports of my cases are incomplete.—No one knows better than myself that it is so. If I have nevertheless persisted in including these cases in my statistics, it has been with the plain intention of giving a complete view of my practice, so that an opinion might be formed from it of the harmlessness of the electrical treatment which I have introduced.

D. The treatment is long and troublesome.—This I am so well aware of that since the year 1884 I have made every possible attempt to shorten it by increasing its efficacy. It is with this motive that I have gone on gradually augmenting the intensity of the electrical current, and have made many alterations in my mode of procedure. It will be seen, too, in the new series of cases, under treatment since 1884, which I have almost ready for publication, how marked is the progress made, in all respects, since the commencement of practice.

II. My Method is only an old Story, and many Others have Attempted the Cure of Fibroids by Electricity before Me.—There is some truth here. But one may observe about the same difference between former applications of electricity and my method as would be found between the ancient theriacal quackery and modern therapeutics. Electricity has been used: but what electricity? in what dose? where? how? for how long and how often? All this is unknown and empirical. Over and above the many indications I have scientifically established as to the technique itself, the mode of operating, the electrical localization, the choice of poles, the acquired tolerance of the indifferent or inactive poles, there is one fact which gives me a right to claim priority, and that is, that no one before 1882, or before me, had taken an exact measure of the current he employed, or had employed an intensity of power known to above fifty milliampères.

III. My Method is Dangerous and the Danger Arises in Various Ways.—*A. From the intra-uterine application. B. From the making of galvano-punctures. C. From the use of high intensities of current.*

I have been reproached on account of several recent deaths said to be directly attributable to my treatment. To this indefinite assertion I again give the most positive denial, as I did last year in publishing my complete statistics. I prove, too, by figures relating to nearly seven thousand galvanic applications, the inocuosness of my method provided the operative conditions are appropriate, that it be used rationally, and with antiseptic scrupulousness. I will say a word on each of the three sources of danger specified.

A. The intra-uterine cauterization, which

is nothing more than a therapeutical hysterometry, might have appeared formidable before the common adoption of the practice of intra-uterine raclage. As that which I do is only a sort of galvano-chemical raclage, there is every reason to regard it as equally beneficent in its action, and my experience more than fully justifies its *à priori* sanction.

B. I put entirely out of the question all abdominal or suprapubic punctures. Any one who is not both gynecologist and electrician might be expected to set down the vaginal galvano-punctures as hazardous. In making them we certainly do come within the risk of doing mischief, which must be guarded against, and which my experience enables me to disclose with exactness.

a. It has been urged as a point against my treatment, that after a number of punctures, when there is free suppuration, or a quantity of necrosed matter in the womb, or in the centre of the tumor, there must be a difficulty in keeping off septicæmia. The objection would have some force if there were neglect in following the rules which have framed, viz.:

1st. To observe a constant and perfect antiseptic practice.

2nd. To make the punctures only every eight or fifteen days, so as to avoid accumulations of fetid matter: with temporary suspension of the sittings as soon as there are any threatenings of fever.

3rd. To make, without exception, only superficial punctures, not more than half, or, at most, one centimetre deep, so as not to cause any central gangrene, and to admit of an incessant antiseptic treatment.

b. Perforation of the bladder or rectum, followed by fistula, and the wounding of some great blood-vessel, are accidents to be apprehended. I admit that a misfortune of this nature happened in one of my early operations. I now point out the way in which it may be avoided.

1st. Never make a puncture in the anterior cul-de-sac.

2nd. Confine the punctures to a lateral, or to the posterior, cul-de-sac.

3rd. Make use of a very fine trocar.

4th. Never introduce a speculum through which to make a puncture: and before proceeding to puncture make a minute and scrupulous examination of the part chosen for puncture.

5. Puncture as near as possible to the body of the uterus, from without inward, making the axis of the instrument correspond with the axis of the organ.

6th. Choose for the seat of puncture the most prominent point of the tumor found in the vagina, making it project more, if necessary, by directing an assistant to press it downward with his hands upon the body above the pubes.

7th. First pass the insulating celluloid sheath through the vagina, and fix it at the spot to be punctured, on the point of the index finger. Then slide the trocar up the sheath and make the puncture.

c. The high intensities, which I have been falsely represented of using exclusively and abusively, are denounced as sources of danger; and the less tolerance shown by rabbits' than the human uterus, under a galvanic current, has been made the base of an objection. As regards the animal, it affords no grounds for comparison. As regards woman, clinical observation has more than sufficiently proved the perfect impunity with which high intensities can be supported: and more than that, it has demonstrated their utility by establishing the fact of the progressive rapidity with which improvement takes place in proportion as the ascending force of the current increases, if it be well applied and well tolerated. I ought, however, to add that there is a limit to this increase of intensity: and it must be regulated by the therapeutical effect obtained. For the present I disclaim all participation in recommending what I regard as the abuse of those intensities—such as the adminis-

tration, said to have been made, of currents of more than five hundred milliampères. Moreover, I feel some difficulty in believing that men, who daily put women under the perils of castration or hysterectomy, are speaking seriously when they denounce my procedures by recounting a number of hypothetical dangers.

IV. My Method is not Efficient—This objection is presented in a variety of forms:

A. For some it is useless in the greater number of cases.

B. Others say that the current has no action on fibrous tissue; that its effect is only shown on the uterine tissue.

C. Others, again, if they admit any action, say that it is only temporary and ephemeral; that the tumor against which we direct it remains just as it was, and that relapses are sure to come. I answer:

A. The faults committed in the application of the treatment when it is done badly or incompletely, the neglect, in fact, of all the instructions I have given, ought in no way to bring disparagement upon the method itself. Further, I affirm again, as I have already written, that the method properly used has effected, ninety-five times out of one hundred, not, as I have been erroneously made to say, the absolute removal of the tumor, but:

1st. An anatomical diminution which does not advance so far as the complete dispersal.

2d. The quick and lasting cessation of hemorrhages.

3d. The disappearance of all the symptoms of compression.

4th. The symptomatic restoration of the patient.

If these four clinical results are not witnessed regularly, and in the same order, in all subjects, the fact may be explained in many ways. I will mention some of the chief.

1st. The anatomical regression generally varies, first, according to the character of the tumor, whether soft or hard, being more rapid in the case of soft tumors than in the hard ones. Then, again, a difference is made by the situation of the tumor, the localization of the electric action. The more distinctly this is subperitoneal the weaker will be the influence of the current. But without doubt the general tendency of all fibroids, when treated with high doses of electricity, is toward spontaneous enucleation, by their disengagement from amidst the uterine stroma. This curative process, which consists in their liberation either through the mucous membrane or the peritoneum, is seen to take place with some interstitial fibroids.

I ought, also, to note here what I have almost constantly observed as the treatment advanced; namely, the occurrence of an accumulation of adipose tissue under the abdominal tegument. This new condition ought always to be borne in mind when estimating the size, or changes in size, in fibroids, by measurement of the circumference of the abdomen. The external measurement, even with a collapsing fibroid, may remain the same simply on account of the recent, and often abundant, quantity of fat developed in front of the tumor. I therefore recommend that, at the commencement of every course of electrical treatment, three measurements of the body should be registered, which may serve for future reference: 1st, The circumference of the abdomen at several points; 2d, the exact thickness of the layers of skin and fat, above, below, to the right and to the left of the umbilicus, taken by means of a graduated compass; 3d, the weight of the patient. I cannot deny that I have in some rare cases been disappointed and failed, the same as happens in all human undertakings. The future may enlighten us about these difficulties, for they all relate either to ascitic fibroids or to fibro-cystic, or to abnormally vascular fibroid tumors. I may add that while certain fibroids shrink without any sphacelation, or any appreciable sero-purulent discharge, others only undergo this

change as the result of a more or less extensive necrosis.

2d. The arrest of hemorrhage has also been disputed. Many who hold this opinion do so without ever having made, or seen, an experiment on some tissue to convince themselves of the hæmostatic power of the condensed action of the positive pole, when applied to a cut and bleeding surface. Then, I am asked to explain how it is that results are not constant. I can only say that this depends upon different conditions, clinical, anatomical and physical. Clinically, hemorrhages are more difficult to suppress in the cases of interstitial and submucous fibroids. Anatomically, the arrest of hemorrhage will be more speedy and certain as the uterine cavity is more narrow and less deep. Physically, the hæmostasis becomes more decided as we augment the intensity of the electrical current, and insure the perfect coaption of the electrode with the entire extent of the bleeding surface.

To resume, the arrest of hemorrhage by electricity is arrived at in three different ways, either associated or independent of each other. The action of the current, which is a vehicle of force and of chemical action, may be studied either as it is manifested, at the poles, or in the interpolar circuit.

a. The polar action of the positive pole is hæmostatic, either at once, or some time afterward: Immediately, if the bleeding surface is totally cauterized by the application of a sufficient intensity; subsequently, after some interval from the commencement of the treatment, if the hæmostatic action has not been powerful enough in the first instance, by the appearance of an atresia, more or less pronounced, of the uterine canal. This atresia, which some gynecologists will not admit, I have the opportunity of seeing almost every day in some one or more of my former patients, although they have not yet arrived at the menopause. In certain women, with a large uterus and an expanded cavity, in which the ordinary sound had moved with great freedom, I have discovered one, two, or three years afterward, that it could not then be introduced, and that the canal only permitted the entrance of a sound of the most diminutive size. Now, this cicatricial atresia (which, however marked it may be, and as a new observation it is interesting to notice this, is not accompanied with dysmenorrhœa) is the physical reason of the proposed electrical hæmostasis, and of the permanence of the results established.

b. The interpolar action is equally hæmostatic in a tardy manner, and in an entirely different way, without the polar action being in any degree implicated. Indeed, there is reason to believe that we may stop hemorrhage, though it must be confessed more slowly, without at all cauterizing the mucous membrane, and by restricting the treatment to galvano-punctures made in the tissues of the tumor itself. The denutrition of the substance of the fibroid will, after a certain time, bring about a progressive stoppage of the hemorrhage, without the mucous membrane having been touched. Either pole may be used for this purpose, though I incline to prefer the negative. It is more to be relied upon because it is more denutritive than the positive. I have, as a matter of experiment, given clinical demonstration of this separate interpolar hæmostatic action, by treating several hemorrhagic fibroids by galvano-punctures only, without any intra-uterine cauterization. I am convinced, however, that the combined use of the two methods will be found more certain in producing the hæmostatic action, in cases where the simple intra-uterine cauterization has shown itself ineffectual.

3d. The cessation of pain and of the effects of compression will vary among patients as much as the causes which produce them. Generally, this takes place coincidently with the retrogression of the tumor. In other instances, on the contrary, it is the initial phenomenon which precedes all others. This may be accounted for either

by the relief of the uterine congestion, which is early realized, or by the mitigation of the ovarian neuralgia. There are cases, however, in which this amelioration comes on but very slowly. I have remarked that in these inveterate cases we can generally recognize some ovarian or tubal complication, some inflammatory or suppurating condition of these parts, which is less disposed to yield to electrical treatment.

4th. The symptomatic restoration of the patient is the most striking result of the treatment, the most rapid, and that which most surprises both the subjects of it and their medical attendants. One of the few adversaries of the method has thus expressed himself: "I have been able to assure myself that all the women under treatment have experienced a stimulating influence, very favorable to general nutrition and the recuperation of their forces. They feel more cheerful, more buoyant, more alert: in a word, seem to have more life. Whether it be that the innervation, sensibility, and mobility of the abdomen and pelvis are more happily excited, the patients keep about without difficulty, and walk freely, in a way which was impossible before anything was done for them. The movements are unembarrassed. The tumor no longer distresses by its weight, or contact with the sensitive viscera. With the trunk and the pelvis disengaged from an overpowering constraint, the limbs do their office with freedom." They acknowledge, too, that the digestive functions are well performed, that sleep is natural, that the miseries of bladder pressure have ceased, that constipation is less annoying, and that there is a restoration of active life in all its integrity and intensity.

B. The second reproach of inefficacy is made on the supposition that the current can act only on fibrous tissue and that it has no effect upon the uterine tissue. There is falsity in this limitation of the effect of the current: and the proof is that an action, combined or isolated, may be observed in both one and the other of these tissues. We see cases, in fact, where the uterus itself undergoes no contraction, as may be ascertained by the sound, while examination above the pubes enables us to decide positively as to a diminution of the subperitoneal part of the fibroid tumor. On the other hand, in the simple hypertrophies which follow chronic metritis, or in the non-fibroid hypertrophies of the uterine tissues, there is always a lessening of the uterine cavity under treatment. The action, then, is here only on the uterine tissue, as in the other case it was upon the fibrous tissue: and the process of disintegration, set up by the passage of the current, results in promoting a general retrograde metamorphosis of the muscular, connective, and fibrous hyperplasias.

C. The third reproach, in reference to inefficiency, which consists in a declaration that the effect of the treatment is only temporary and ephemeral, can be no better sustained. It is now six years since I began the practice of this method, and I have regularly and carefully kept an account of the condition of my patients. I can affirm that relapses have been truly exceptional. The very infrequent cases where I have had to administer secondary treatment were those of women who had unadvisedly discontinued their attendance. There has been no difficulty in bringing this secondary treatment to a satisfactory end.

V. My Method is Empirical and Unscientific.—It is said that it wants precision, and that I have given a theoretical explanation of it which cannot be admitted. If my method be empirical, it stands, in that respect, on the same level as the whole of pharmaceutical practice: empirical as the giving of opium which causes sleep, empirical as the use of quinine and digitalis to check fever or modify the circulation. The why and the wherefore of things elude us. What we have to do is to make ourselves familiar with the natural laws ruling the

phenomena which comes before us. Every organic or inorganic movement, every molecular change excites a corresponding development of electricity, and the process of nutrition, like every other vital action, is subject to this law. Now a continued current passed through the human body marks its presence in two different ways. At the points of entry and exit, that is, at the two poles, in virtue of an electrolytic action inseparable from the passage of the current, we find an accumulation of acids on one side and of bases on the other. This is a fact commonly known, and I shall have to refer to the therapeutical importance of these acids and bases. In the organic substance intermediate between the two poles, the interpolar region as it is called, through which the current spreads in rendering itself from the point of entrance to that where it is discharged, there is a twofold action. The one is contemporaneous with the current itself, the other is posthumous. The contemporary action consists in an exaggerated vital and circulatory activity, favorable to the rapidity of nutritive changes. This will explain the absorption of certain effusions, either interstitial or intra articular, under the influence of a current directed through them. The posthumous action, enduring after the cessation of the current, is in effect charged as a second battery. It is consequently endowed with a supplementary electro-motive force or tension, which in its discharge prolongs the topical and trophic effects that the preliminary current had begun; and it still further advances the retrograde metamorphoses which we see in non-malignant neoplasms. Yet we encounter some who say that there is no such thing as interpolar action, and that the current leaves no visible or tangible trace of its presence. Who has ever been eye-witness of a current in a nerve-trunk? Who has ever seen the something which is transmitted by the telegraph wires? As it is with many natural phenomena, such, for example, as nutrition, which we only know by its effects, so it is with the current. Let anyone who denies the fact of interpolar action but just apply one pole to the forehead and the other to some part of the body, the hand or foot, and he will at once have sensory evidence of two phenomena which constantly follow: First, the appearance of flashes of light, and secondly, a change in taste of the saliva. How should we account for these invariable phenomena, unless there be an interpolar action of the electric current? Place one pole on the neck, over the pneumogastric nerve, and let the other be held in the hand. You will thus stop many a threatened vomiting. It must be some interpolar action which produces this effect. Indeed, nervous pathology as a whole (nervous, medullary, cerebral, or peripheral) requires ordinarily nothing more as a means of relief than the interpolar action of the continued current. If interpolar action were not a reality, electro-therapeutics would soon become an idle word, for it would be reduced almost to the simple chemical or mechanical effects of polar action; and these we might in a great measure afford to neglect. As we recognize this sceptically treated interpolar action by its unavoidable consequences, so we have, as evidence of its presence, the effects of polar action. On this point, again, I am accused of empiricism: and my accusers merely substitute their erroneous interpretations of the respective action of each pole for the formulas that I have laid down. I have said the negative pole is more irritating, more charring, more destructive than the positive pole. In opposition, I am told that as acids abound more in the human tissues than the bases, we ought to find a greater proportion of acids at the positive pole than of bases at the negative pole: hence the preponderant action, quantitative, of the former. But the fact is overlooked that a current has no caprices, and acts only according to the laws of its nature; that electrolysis or decomposition takes place molecule by molecule, equivalent of acid for

equivalent of base, whatever may be the composition of the body under experiment. The only preponderance which one pole has over another is purely qualitative. The dry, positive eschars offer a considerable resistance to the flow of the current, and consequently impede its diffusion. The negative eschars, on the contrary, are softer and more moist, and, only feebly opposing the current, allow of its more easy dispersion. There is no difficulty in convincing one's self of this fact. Take two electrodes of equal dimensions, of gas-carbon it may be, covered with moistened leather, and place them symmetrically on two parts of the body. Of the two poles it is the negative which will first give indications of its activity by the pain it occasions, the eschars and the extent of the eschars which it burns. In the same way after punctures with two trocars actually of the same character, the loss of substance resulting from the fall of the eschar, made by the negative pole, will be much more considerable.

In conclusion, if the electrolytic action is found to be concentrated at the two points of entry and outlet of the current, it is impossible to deny the intermediate dynamical action, which is more powerful than either. It matters little for our purpose whether this intermediate action be directly upon the tissue-cells, or, which is more probable, upon the nervous influx of which it augments the tension, as auxiliary to the normal currents in them. The clinical results are incontestable. There is the same retrogression of fibromes that is often found to take place after the menopause, or the excision of the ovaries, without our being able to furnish any unimpeachable theory to account for the facts.

VI. My Method is of no Use, and there are Better Ways of Treatment.—Let us consider the worth of these other modes of getting rid of fibroid tumors.

A. Mere expectation, or literally doing nothing, aided by repose in bed, is sometimes trusted to as sufficient to assure the retrogression of the tumor and the quiet existence of the patient. This can only be true of a few fibroids, especially after the change of life. But it will not do to lay down an absolute rule, based on these particular cases. Every day's experience shows us that the death of a great many women is the consequence of their tumors, and that others, in large numbers, have their lives embittered by pain and hemorrhage. I admit that some, under the influence of confinement to bed for several months, find a temporary amendment, but I cannot see that this enforced rest ever produces a spontaneous and regular diminution of the fibroid and the disappearance of the symptoms, such as follow the use of my method. Nor can it be maintained that similar improvements under my treatment are mere coincidences, for my patients are not kept in bed, continue their ordinary occupations, mostly come for their sittings to my consulting-rooms, and follow the common mode of life. I believe that much more is to be expected from the influence of the menopause alone, although not as a matter of course; for I have had under my care not a small group of women from fifty-five to sixty-five years of age, who had experienced the disappointment of finding their tumors enlarged considerably, and even doubled in volume, after the menopause.

B. Then it is said that treatment by medicines will give relief and is equal to the cure of fibromes. This assertion will not bear examination. The very multiplication of the remedies eulogized is a proof of their powerlessness. What, in fact, do the recommendations amount to? As for mineral water patients may go on using them, hopefully and unprofitably, year after year till they arrive at the time of the menopause. Internal medication is very uncertain, and for the most part untrustworthy. Ergot stands at the head of the list of things tried. Independently of the local and general mischief of which it may be the cause, it must be allowed that it more often fails

than succeeds. Women come to me showing the marks of ergot injections, to which they had patiently submitted for years without any perceptible benefit. Before the adoption of my electrical method, one other kind of treatment only had been at all encouraging; it was that of A. Tripier, who places in the uterus pencils of a paste of iodide of potassium.

C. Next, surgery claims the precedence of medicine. First of all there is the minor surgery, which includes intra-uterine raclage, liquid injections, and punctures with the actual cautery. However excellent may be the use of raclage in simple endometritis, its sphere of action is limited to the mucous membrane. It has no power over lesions of the parenchyma, none over fibroids. Nothing better can be said of liquid injections. They, too, have special dangers by no means insignificant. As for vaginal cauterizing punctures, their effect is deceptive and temporary. Their action in no way corresponds with that of the galvano-chemical punctures which I employ. These two modes of puncturing have, in fact nothing in common but the name. They are essentially different. In a cauterizing puncture, even when it is a galvano-thermic, cauterization, heat is the agent upon which we depend.

There is no special electrical action. The platinum wire, brought to incandescence by the current, burns and burns only. It conveys no current into the tissues, with galvano-chemical punctures, we have both a local chemical action and a general dynamical action, but no effect of mere burning. The electrical current, going from pole to pole, inevitably traverses all the tissues upon which we intend to operate.

We now come to surgery proper, which assumes to have settled the question magisterially. The exploits of ovariotomists have given a new character of boldness to abdominal surgery. In urging operations, the risk of the life of the patient has been sometimes too lightly considered. In spite of its difficulties, its dangers, the long convalescence which it involves, and always with the presumption that antisepticism will come to aid in lessening the mortality, abdominal hysterectomy has been by some hands pushed too far. To go no further, for figures, than Paris: our Surgical Society has recently published a statement showing that, according to the operators, the deaths from this operation mount up to from forty to fifty per cent. If left to themselves, do patients die at this rate from their tumors? And have we not reason to assent to what Thomas Keith has said, that "abdominal hysterectomy has done more harm than good?" We see, as a consequence, a general disposition to substitute the vaginal operation for that which has been so fatal, True, the loss experienced is smaller, but then comes the drawback of its being practicable only at the early stage of growth; for I maintain that it would be impossible in the case of large tumors. Operative failure in this direction has led many surgeons to discard hysterectomy for the cutting away of the uterine appendages; the intention being to give women the supposed advantages of an induced menopause. But even here there is no guarantee of constant success, for every operator has been obliged to record not only inadequate results, but some cases of death. It therefore becomes a serious matter for consideration, whether, as a point of professional morality, one is not bound to make trial of a system of treatment which I and others affirm to be not only harmless, but effective, before recommending a patient to take the risks of hysterectomy or the certainty of mutilation.

VII. My Method Wants Exactitude and is Uncertain in its Effects.—It has been objected that, however easy it may be to graduate the intensity of the current, and consequently to estimate the equivalent of acid and alkali set loose by its passage there must always remain an undetermined free residue capable of effecting further

cauterization after saturation of the uterine secretions. Thus uncertain excess of cauterizing material is a bar to anything like precision in your procedure. I meet this objection in two ways, by pointing out, first, the mistake made in confining attention only to the polar action; and, secondly, that a wrong idea is formed of the nature of electrical cauterization. This is of primary importance. While ordinary caustics, whatever be their composition, act from without inward at the point of contact, and, after a time, form in the products of mortification a barrier to any more profound penetration, the galvano-chemical caustic acts in a different manner, by setting up a kind of auto-cauterization. The tissues are decomposed by the electrolytic action of the current, and the resulting products are the cauterizing agents. The character of the eschar thus formed is in exact relation to the intensity of the current and the duration of the operation. No acid or basic product is left disengaged, and the tissues cauterize themselves continuously from the beginning to the end of the sitting, without any other limitation, interruption, or suspension of the action, except that which comes from the will of the operator. This cauterization encroaches more and more on the deep layers of tissues, instead of being restricted to the surface, and ending, as imagined, in the disengagement of acids and alkalies in the uterine cavity.

VIII. My Method is Difficult, Costly, and Troublesome.—So far as regards difficulty, there certainly is less than with hysterectomy. I want no assitant, can operate anywhere—at the home of my patient or in my own room, and though the operator must be both gynecologist and electrician, the scientific qualifications are easily acquired. When one has to pay the enormous price demanded for a complete laparotomy equipment, it seems absurd to quibble about four hundred or five hundred francs, the cost of electrical apparatus. It will be seen that the trouble of transport and management dwindle to a mere trifle, when I am able to announce that, at my suggestion, the electricians in Paris are now making perfect batteries, which take up very little room and are quite transportable, the the cost being one hundred and fifty or two hundred francs.

IX. My Method is Imperfect.—Here the objections are both to the apparatus and instruments I employ and to the way in which I use them.

A. The apparatus.

1st. The galvanometer of Gaiffe.—Some call it a toy; others say it is not to be depended upon. I have used this instrument for some years and have made my own observations upon it; and I have had it, and others, submitted to the opinion of competent electricians. We find that the galvanometer of Gaiffe is the only one in which the graduation is exact. By testing, I can find in the record of only from two to three per cent., which is of no practical importance. It also has the merit of being cheap. Édelmann's galvanometer without "shunt" fails to the amount of 7.05 per cent.: with "shunt" the defect increases to twenty per cent. It registered $\frac{160}{1000}$ ampère, instead of $\frac{200}{1000}$ ampère. An American galvanometer by Waite is of the same construction, and has the same faults as the German instrument. The constants are:

without shunt,		error	6	per cent.	at least.
with	" 10 —	"	32	"	"
with	" 100 —	"	25	"	"

In face of these plain physical facts all theoretical complaints must give way.

2d. The hysterometer in platinum.—Objection is made to its being straight and rigid: and it is proposed to replace it by a sound made of copper which will bend easily and accommodate itself to the passages. Any one who is in the habit of passing a sound, as it ought to be done, without the speculum, will give preference to a sound which is rigid: *a*, Because it enters more readily: *b*, because we can more easily change its position in the uterus: *c*, because it can be made to pass more easily

over any obstacles, especially about the internal orifice. Another sound, made of platinum wire coiled around a stem of copper with a stem of caoutchouc, has been recommended instead of mine. The insulating end of caoutchouc is bad, since it stands in the way of complete cauterization. The wire also is wrong, in that it does not make a good conductor, is kept clean with difficulty, and with so many interstices can scarcely be made aseptic. The sound is too flexible and does not preserve its polish.

3d. Dirty, cold and troublesome.—Such is said to be the pad of clay which I place upon the abdomen: assuredly, I should be pleased to find something better. I have tried several of the substitutes which have been proposed for the clay, but have found none of them to have the same quality of plastic adaptive adhesiveness. Neither do they well guard against the burning of the skin. The women, therefore, have more pain and are more scarred, as I observed in London. The abdominal electrode of Franklin Martin, of Chicago, is the best I have met with, and will perhaps be adopted. It gives us the opportunity of applying it to the abdomen at an agreeable temperature.

4th. The insulating sheath of celluloid.—In exchange for this, we are offered sheaths made of gum elastic, such as used for catheters, which is corroded by many solutions and tears readily. I cannot find that it has any of the qualities of the celluloid which I introduced. This substance insulates perfectly, is aseptic, hard, easily cleaned, durable, not injured by acids, can be plunged, if necessary, into boiling water, and has only the disadvantage of being inflammable.

B. Technique.—For some curious reasons, which I cannot understand, there has been a sort of jealous rivalry in changing the details of my practice.

1st. In regard to intensities.—Some have talked of using currents of five hundred and one thousand milliampères. Now, this would be dangerous, and I should say impossible; impossible certainly without chloroform, for in all my experience I have never seen a woman on whom such a dose could be tried—dangerous for the safety of the skin of the abdomen, which must be burned, and from the general mischief which would follow the operation. But knowing the little reliance to be placed in the greater part of the galvanometers in use, I look upon all reports of excessive intensities as exaggerations.

2d. Dosage uncertain.—As I am supposed to have been rather loose in my dosage of electricity, it has been thought proper to call in the aid of mathematics to regulate matters for all sorts of cases, but especially for bleeding cases. An experiment is made showing that a current of twenty-five milliampères intensity, traversing a positive electrode of platinum, with a surface of one square centimetre, and applied for five minutes to the mucous membrane of the neck of an enlarged uterus, will so condense the structures that no further bleeding can take place, even when they are punctured to the depth of one and one-half centimetres. Hence, it is concluded that success must follow as a constant consequence if we maintain the demonstrated proportions between sound and surface: and it is laid down as a rule that we are to use a current of fifty milliampères for an electrode of two square centimetres surface, and of one hundred milliampères for one of four square centimetres. This may sometimes turn out to hold good, but not with the précision announced. For who does not know how many sources there are for these hemorrhages: lesions of the mucous membrane, lesions peripheral. *a.* Lesions of the mucous membrane. These vary in extent and depth, in the condition of the blood vessels, and in the amount of congestion. *b.* Peripheral lesions, such as reflex hemorrhages, hemorrhages connected with the evolution of intra-parietal neoplasms, passive hemorrhages due to disturbance of the peri-uterine circulation, hemorrhages

depending upon some affection of the tubes or ovaries. It is evident that, setting aside simple lesions of the mucous membrane, the dosage of electricity, in its application to uterine diseases, must vary according to the circumstances of each case. I believe that the general instructions I have given from experience will serve to guide through most difficulties: Use for a bleeding fibroid the highest intensity of intra-uterine current a patient can bear; if that does not answer, add punctures to the cauterization; should they not be sufficient, put the patient under chloroform and raise the dose.

Such, gentlemen, are the objections made to my methods, and such are my answers. I consider my answers perfectly meet the objections. But there is one fact which overrides all verbal quibbles and theoretical irrelevancies. As regards my method, gynecologists muster in two ranks: those who have tried it, and those who have talked about it. The practical men give me their adhesion, and with that I am satisfied. The talkers have had their say, and one of your English proverbs, "An ounce of practice is worth a pound of theory," is enough for them.

Part II. The Novelties in my Method of Treatment.—Having thus, so far as I am concerned, cleared the ground of controversy, I pass on to clinical and practical questions. I am far from supposing that we have reached the last stages of the development of the electrical treatment of fibroids. Some modifications, which I proceed to explain, will, I think, be found to mark a decided progress. The two dominating symptoms in these cases are pain and hemorrhage. I give them separate consideration.

I. Pain.—I need not enter into details as to the many sources of this pain; it may be either concentrated in the uterus itself, or diffused. We have: 1st, Localized uterine pain, arising from an augmental interstitial compression, such as is often complained of during the early period of growth, without there being any appreciable bearing upon the neighboring nerves or organs. 2d. Extra-uterine pain, which may depend upon a not uncommon, but often oversighted, partial perimetritis or parametritis. We meet with inflammatory conditions of the appendages, and sometimes with uncomplicated ovarian neuralgia. To relieve this symptom, pain, the almost uniform gynecological solicitude we have, as I was the first to point out, a powerful resource in faradization. The currents of tension, applied as much as possible in the cavity of the uterus, and under the conditions which I have for some time indicated as to electrodes, and especially the duration of the sitting, are sedative in a high degree. They will be found of almost certain arresting power in simple ovarian neuralgia; calming only in cases of pain from other sources, and of but very little service in the acute and suppurating forms of peri-uterine inflammation. We have then, in my opinion, a most energetic agent with which to encounter this element of pain, in cases of fibroid tumor, in the judicious association of induced and continued currents, under the form of an intra-uterine galvano-chemical caustic. But we are not restricted to the use of these means only. For we have in such cases a supplementary expedient in galvano-puncture, or the direct transmission of a current through the substance of a tumor, using for this purpose the negative galvano-puncture. We may perhaps account for the good effects observed, by the rapid retrogression of the tumor, or in the setting up of a more powerful derivative action. Explicable or inexplicable, the clinical fact remains undeniable, that many of my cases of painful fibroids have been put at-ease by the negative galvano-punctures.

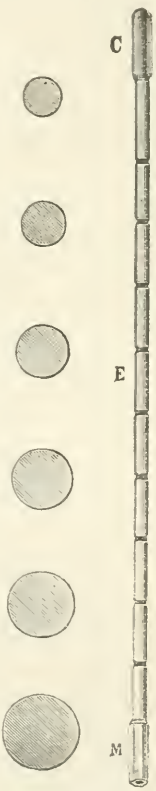
Such was my ordinary practice till lately, when a few instances of failure led me to try the effect of the positive puncture on some patients, on whom the reaction from the negative punctures had caused too great inconvenience or alarm, and on others

whose hysterical temperament made the negative punctures insupportable. First I tried with steel needles, but I was thwarted in two ways. First, they oxidized and became immediately useless, and then the oxidization, together with the dry eschar formed around the electrode, created an obstacle, which no one as yet had noted, to the passage of the current, and consequently caused a diminution of the electrical supply. Thus, other things being equal while a negative galvano-puncture furnished an intensity of one hundred and fifty milliampères, that of the positive puncture did not exceed fifty milliampères. To free myself from this difficulty, I put aside the steel trocars and replaced them by a fine gold needle, which is not acted upon in the same way and will last for some time. The only precaution to be used with this needle is, that it must not be allowed to remain in contact with any mercurial solution which disintegrates metals, and renders the gold brittle. The vaginal irrigations must, therefore, be made with the carbolic, or other antiseptic mixtures, to the total exclusion of all mercurial preparations. I may say that I have great confidence in these positive punctures for fibroids, especially when we encounter persistent pain; and I even have recourse to them when the pain seems to be connected with a state of peri-uterine inflammation.

II. Hemorrhage.—I believe that we may improve our way of treating hemorrhage, and render it shorter and more decisive. We occasionally fail for two reasons. 1st, That all the bleeding membrane inside the uterus is not equally and uniformly cauterized; and, 2d. That we have not used a current strong enough to cauterize sufficiently.

1st. *Irregular cauterization.*—I employ a straight platinum sound, which answers perfectly well in a small uterus with a small cavity. But its action lessens in proportion as the extent of the mucous membrane enlarges. This may be owing either to the instrument moving too freely and coming in contact with only one surface of a large cavity, or to some inequalities of surface such as are found in the hourglass form of uterus, when the small straight sound touches only isolated points, cauterizing some of the utmost, while others escape altogether. I overcome these difficulties in two ways:

a. After a multiplicity of experiments I have devised a new electrode, which is soft, and not only a good conductor, but harmless and quite aseptic. It is composed of gelosine* and can be made to mold itself upon the whole of the uterine interior. It must be previously sterilized either by open boiling and then cooling, or by exposing it in the containing vessel to a temperature of from one hundred to one hundred and twenty degrees centigrade. This matter is then introduced into the cavity of the uterus, so as to fill it, by means of a long piston-like sound of some insulating material, such as hardened caoutchouc or celluloid. The metallic stem of this piston-sound may then be used as electrode, and the current, passing through it, to the centre of the gelosine paste, thence radiates over the whole mucous membrane. There is another way of making use of this gelosine packing. Withdraw the piston sound when the cavity is completely filled, and plunge a metallic sound, insulated nearly up to the point, into the middle of the gelosine, and make connection with the battery.



Electrode for Galvano-chemical Cauterization†

* *Gelosine:* Gelosine is the mucilaginous principle recently extracted by M. R. Guerin, chemist, of Paris, from the gelose of the *Gelidium corneum*, a sea-weed of Japan, found in abundance at Singapore.

† Electrode for Galvano-chemical Cauterization, one-third of actual size. C, Gas-carbon, two and a half centimetres

b. I succeed in cauterizing the whole of an irregular cavity by progressively increasing the size of the electrodes, so that in the end the entire surface is brought into contact with the conducting body. To do this with sounds of gold or platinum, the only available metals, was a costly affair, and I instructed Gaiffe to make for me a series of seven sounds of gas-carbon,† which conducts readily, is little to the action of the positive pole, and may be had cheap. I possess therefore a case of seven sounds of different sizes, rising from five millimetres to twelve millimetres in diameter. Beginning with the smallest sound, sufficient dilatation may be made for the others to follow in succession, till it is found that one of them gives the coaptation required. This is the solution of the first part of the problem—the equal spread of a current over the whole of a large or irregular uterine cavity.

2d. *The uterine mucous membrane insufficently cauterized.*—The coagulating or hæmostatic action—local and polar—which we seek at the positive pole, under ordinary circumstances, will be strong and efficacious according to the quantity of acid disengaged ; that is, in other words, it will vary in proportion to the electrical intensity. Now, there are two means by which we can regulate the intensity, at the points of entry and discharge of the current.

a. The first is to engage a large number of elements. We may thus apply in certain cases an intensity of current varying from one hundred to three hundred milliampères. But with regard to these degrees of intensity, we must not lose sight of two considerations, the safety of the uterus, and the tolerance of the patient. If a few women are able to bear unflinchingly, without chloroform, as much as two hundred or two hundred and fifty milliampères there are many more in whom it is impossible to make the dose exceed one hundred or one hundred and fifty milliampères. Now in a uterus of large size, where it would be necessary to introduce an electrode of proportionate length, perhaps fifteen or twenty centimetres long, this latter strength of current would not answer our purpose. For it is with electricity as it is with other natural forces, that power dimishes as the surface is extended. We see this in a water-course, where the mechanical effects of a confined portion of the stream are reduced to insignificance if the bed be much widened.

b. This leads to the adoption of the second and more practical means of attaining the same end. We vary and augment the intensity at the points of contact of the poles without altering in any measure the total interpolar intensity. The surface of the active electrode must be diminished or its intensity increased. It is understood that, with a greater intensity in an electric circuit, the action of the two poles will be different according to their respective size. Here, then, in varying the extent of the electric surface, we have the means at will of rendering the poles active or indifferent. It is easy to make this accommodation in regard to uterus. We wish to produce a vigorous cauterization, without increasing the general interpolar intensity beyond the point easily supported. Lessen the intra-uterine electrode by one-third, or fourth, or a fifth of its original length, and forthwith the cauterization or topical action at the seat of contact will be made, thus, four or five times more powerful. I therefore lay it down as a rule in severe hemorrhagic cases, where it is expedient that a patient should bear a high dose of electricity without much suffering, that the intra-uterine electrode be reduced to a very trifling length ; though, under such circumstances, it is essential that it be passed from one extremity of the cavity to the other, so that every part of the mucous surface is succes-

long, rounded at the extremity. It is fastened by a screw to the end of the metallic stem. It may be replaced by others of the same length, but of different sizes. The diameters, gradually increasing from five to twelve millimetres, are represented by the shaded circles. E, Circular grooves, at regular distances of two and a half centimetres, on the caoutchouc covering of the metallic stem of the electrode. M, Handle of the electrode to which the rheophore is attached.

sively and completely cauterized. I began my operations in 1882 with a metallic sound, bare only at one extremity. In my first essays in cauterizing the mucous membrane of the uterus I had no other. Now I have improved the instrument, and my electrodes of carbon, though of different sizes, are all of the same length, two and a half centimetres. The metallic stem of this instrument is covered with caoutchouc, and on it, at distances of two and a half centimetres, lengths which correspond with that of the carbon electrode, I have slight circular grooves marked. The electrodes are applied as follows :

1st. After disinfection in some strong antiseptic solution, in order to secure full cauterization the instrument is driven as far as it will go ; if possible, to the end of the uterine cavity.

2nd. When the electrode is in this position the highest bearable intensity of current is turned on, and we judge of the necessity of augmenting by the effect of previous operations. The intensity must be increased when the electrodes of larger volume, and consequently of more surface, are taken into use.

3rd. The first stage of cauterization being finished, the instrument is withdrawn just as much as the length of the carbon, and in that situation the second cauterization is effected the same as the first, and so on, changing the position of the carbon till all the interior of the uterus is cauterized section by section. To do this methodically, the index-finger is passed into the vagina, and the pulp and nail pressed on to one of the circular grooves of the stem. While, in shifting the seat of action, the other hand retires the sound, the index-finger in the vagina remains immovable, and gives information as to the extent of change of position of the electrode by the touch of the following mark.

4th. It is better, if possible to cauterize the entire cavity at one sitting, letting each sectional cauterization last from three to five minutes, as the gravity of the case and the size of the cavity may show to be proper.

5th. In continuing the treatment, the duration and force of the current must be made to depend upon the effect produced by the cauterizations at previous sittings.

6th. It is well to be aware that, when the cauterization of the neck of the uterus is once made, the electrode, in passing through the internal orifice for further action, will occasion much more pain. I believe I was the first to mention the fact that the neck of the uterus, which is so little painfully affected by ordinary caustics, the hot iron, or the knife, is, on the contrary, very sensitive, much more so than the body, to the electrical currents, either induced or continued.

I think, in conclusion, I may say that it will henceforth be admitted we have in electricity a most powerful means of safely treating fibroid tumors, and that it will in future be felt as a duty by the surgeon to make use of it before adopting other measures. Carrying out my method as I have directed, I am convinced it will yield to others the same new and interesting results that it has been my fortune to witness.

Progress of Science.

DYSMENORRHŒA CURED BY GALVANISM.

By B. C. Williams, M.D., Chicago.

Med. Era, August :—Miss C., aged twenty-six, began menstruating at the age of thirteen. Menses were regular and normal until the age of twenty-one. At that time, during her menstrual period, she was out boating and was capsized. The cold bath stopped the flow. From this time she began having trouble with the menses. They were irregular, and accompanied by the most intense pain, and mental disturbances. I saw her for the first time about a year ago. At intervals for four years previous she had been under the care of physicians for longer or shorter periods, but with absolutely no benefit. Examination revealed a highly inflamed cervix, very sensitive, and bleeding at the slightest touch.

The vagina was also very sensitive. For two

hours before the flow appeared she suffered the most intense pain in the region of the uterus (which was not relieved from two to four hours after flow appeared), intense headache, and almost a maniac. For two years she had not had a period without taking opiates as soon as the pain began. Knowing that she had taken all medicines which could possibly be of benefit, I did not give her any, but asked them to call me at the time of the next menstrual period.

Being called at that time I found her suffering as usual, and I applied the galvanic current, placing the positive pole over the region of the uterus and the negative at the the region of the second lumbar vertebra. The current was mild and continued twenty minutes, at the end of which time she was asleep. She slept for six hours, and awoke suffering comparatively little pain.

After the cessation of the flow, I gave her the galvanic current twice a week until the next menstrual period, which came on in four weeks. At this time the pain was not so great. However, I proceeded as at the former period, and after it. With this treatment, and this alone for three months, the patient was discharged as cured. I saw her but a day or so ago, and she told me that she had had no pain since during her menstrual periods.

GOAT'S MILK AS A SUBSTITUTE FOR COW'S MILK IN FEEDING INFANTS.

Ed. Can. Prac., '88 :—*The British Medical Journal*, in discussing this subject, states that the cow is remarkably prone to tuberculosis, much more so than is generally supposed. It quotes Dr. Ritchie as saying that in some localities fifty per cent. of the cattle die of this disease, and that the animals may show no distinctive signs during life, thus making an accurate diagnosis, with our present knowledge, impossible. This is, of course, an extreme view, but the dangers from such a possible source should always be borne in mind. Even when the cows are healthy the milk may be diluted, adulterated or contaminated in its carriage.

As a substitute for the cow the goat is recommended because its milk is more easily digested by infants than that of the cow. An objection has been raised against goats' milk that it frequently has an unpleasant odor from the presence of hircic acid, but Parmentier says such odor is only observed in the milk of goats that have horns. The goat is generally healthy, easily kept, and so cheap that the poor as well as the rich may purchase and keep one at a small outlay. We believe that these facts are not sufficiently known or appreciated in this country. It is satisfactory to know that the safer goats have the better milk, *i. e.*, the ones without horns.

VARICOCELE IN THE FEMALE: WHAT IS ITS INFLUENCE UPON THE OVARY.

By A. Palmer Dudley, M. D., N.Y.

N. Y. Med. Jour., August 11 :—By this term the writer refers to a dilated and tortuous condition of the veins in the broad ligament. He says in conclusion .

1. It is my belief that varicocele in the broad ligament is not a rare condition.

2. That it is produced by long-continued congestion, arrest of uterine involution, from whatever cause, and chronic constipation being the most important factors in its production.

3. That it may exist and be mistaken for so-called cellulitis or salpingitis unless careful rectal examination of the broad ligament is made.

4. That it will produce changes in the structure and function of the ovary similar to those produced in the testicle, causing atrophy of its stroma, and interference with the proper development of the ova to such an extent as to produce cystic degeneration of it and consequent sterility.

5. When the varicocele has existed for some time, or for a sufficient length of time to have caused a permanent dilatation of the veins, local treatment by counter irritation (with Churchill's tincture of iodine), cotton tamponing, pessary support, or local depletion will be of no permanent benefit.

6. That the result of a radical operation for its removal in the four cases reported, although not sufficient to make the operation a justifiable one in all cases, is strong evidence in its favor, even though the woman has passed the menopause.

THE EXPLORING NEEDLE IN THE DIAGNOSIS OF BONE DISEASE.

By Ap Morgan Vance, M. D.

Am. Prac. and News, August 18 :—For ten years I have been using the exploring needle as an aid in the diagnosis of the extent and character of diseases of the bone, particularly near joints.

I have used the needle many times, and yet have to see harm result. On the contrary, I have seen very much relief and comfort follow its use.

In many instances I know of no way to gain as much knowledge of the condition of the bone as by this method. I recall a case of hip-joint disease wherein I was able to determine that the femoral head was completely softened and breaking down. In fact, the propriety of an excision was determined in this way alone, as the other evidences of disease were rather slight. Even just before the operation, which was done two weeks subsequently to the above examination, several gentlemen who were present

thought I was about to operate on a sound limb. Amputation was done in this case, because the femur was diseased from end to end.

The possibility of the needle being forced into healthy bone is a question that may arise. I have tested this in the cancellated structure of the bones of animals, lamb, ox, etc., with negative results, finding it impossible to make the delicate and supple needle enter to any depth. It is hardly possible to be deceived about diseased bone—not only does the needle enter without resistance, but a sense of grating and again of the freedom of the needle's point is felt, and these are signs which give the surgeon reason for believing the bone to be diseased. Sometimes the first evidence of complete disintegration and the presence of pus is first discovered in this way. I feel that this is an important subject, as the early diagnosis in these cases is of the utmost importance in determining treatment. Particularly is this true of hip-joint disease. If the exploring needle will give us light as to the degree of involvement early, we can remove dead bone before so much is diseased as to contra-indicate interference. Many more points might be mentioned, but I have given a sufficient number, I hope, to elicit discussion *pro* and *con*. I will close by asking: Does the needle used as described do any harm? If so, what?

For my part, I cannot understand in what way injury could be done. If the bone is healthy, the point of the needle will go no deeper than through the periosteum, and certainly that will do no damage. If the bone is soft enough to allow the needle to enter, it is already so much below par that further injury by this procedure will be impossible. I suppose the relief to pain is produced by the escape of confined fluids into the surrounding parts. This has been very evident in many instances in my experience. I remember a marked case, a man suffering with an inflamed knee, wherein I wished to explore the head of the tibia. Having no needle with me, I used a common triangular silver probe; after two punctures with this the pain was much diminished.

TREPHINING THE SPINE FOR THE RELIEF OF POTT'S PARAPLEGIA.

Ed. N. Y. Med. Record, Aug. 25:—Trepanation or resection of the spinal column for the relief of paralysis following injury has been performed a number of times during the present century (Ashhurst has collected the reports of forty-three such operations), but we believe the following is the first recorded instance of trephining for the so-called pressure-paralysis of spinal caries. The case is reported by Mr. J. H. Thompson, in *The Lancet* of July 14, 1888.

A boy, aged seven, was admitted to the Hospital for Sick Children, Manchester, suffering from angular curvature of the spine. The disease, which had been first noticed about seven months before the admission of the patient, involved the mid-dorsal region. There was paresis of the lower limbs, with apparent psoas contractions and wasting of the muscles on the right side. In spite of the usual methods of treatment this condition gradually grew worse, until there was complete paralysis of both lower extremities, with loss of sensation and incontinence of urine and fæces. It was then decided to open the spinal canal, in order, if possible, to relieve pressure.

The operation was performed by Mr. C. A. Wright. An incision about four inches in length was made along the lines of the most prominent spinous processes, and the soft spots on each side separated so as to expose the osseous surfaces. Three laminæ were divided on each side, and were removed with their attached spines, uncovering the sheath of the spinal cord, which, at the lower part exposed, was found surrounded by a buff-colored, tough, leathery substance; this was cut away with scissors. The cord did not appear to pulsate, but no point of constriction could be found. The muscles were brought together by deep sutures of catgut, and the skin with waxed silk; a small drainage-tube was left in. The wound, having been dusted with iodoform and boracic acid in equal parts, was dressed with sublimated wood-wool wadding. Careful antiseptic precautions were observed before and during the operation. The trunk was supported by a special iron splint.

The wound healed rapidly by first intention, except at the drainage opening, which, however, also quickly closed. No change was noticed until the twelfth day, when pin-pricks could be felt about three inches below Poupart's ligament on each side. Nine days later there was slight voluntary flexion of the left thigh, and on the following day distinct voluntary contractions of the right quadriceps extensor were observed. Three days later pin pricks could be felt as far as the knees; and both thighs could be slightly flexed. On the day following the pin pricks could be felt in the left foot, but on the right side there was no return of sensation below the knee. No further improvement took place, the condition of the patient remaining in *statu quo* until March 17 (fifty-one days after the operation), when the area of anæsthesia was found to be increased, and a few days later was practically the same as before the operation; about the same time he lost all power of voluntary movement in the lower limbs.

Chian turpentine in cancer is again claiming attention, recommended by Dr. John Clay, who asserts that he has seen a number of cases of cure even in advanced stages.

THE NATURAL MECHANISM OF THE EXPULSION OF THE PLACENTA AND THE PROPER MANAGEMENT OF THE PLACENTAL PERIOD.

By George T. Harrison, M.A., M.D.

Gaillard's Med. Jour., August.—Four methods may be enumerated as having advocates among distinguished obstetricians. First is the method of Credè, which is the one most generally adopted, the essential feature of which is that the placenta is manually expressed out of the uterine body. Secondly, the Dublin method described by McClintock and Hardy in 1848, and afterward by Barnes and Spiegelberg.

This manipulative procedure consists in this, that immediately after the exit of the child's head through the vulva, the hand is laid on the fundus, and by friction and kneading energetic contractions are evoked, so that the placenta is quickly separated and is expressed beneath "the ring of contraction." By further pressure it is forced out of the vulva. Thirdly, by the expectant method, which has Ahlfeld, Dohm and Freund as its advocates, the separation and extrusion of the placenta is left, as a rule, to the natural forces. Fourthly, the method of Schroeder, which I give in his own language: "I consider it the best procedure in the placental period, after the expulsion of the child, not to rub or press the uterus, but to wait quietly until the diminution and ascent of the uterine body and the protuberance of the symphysis indicate that the placenta is expelled from the uterine cavity, then by gentle pressure to expedite its passage through the vulva." The observations of Cohn show that the spontaneous expulsion of the placenta out of the uterine cavity into the "lower uterine segment" requires for its completion five to fifteen minutes. After this is accomplished further delay is unnecessary, as the placenta can be removed now without injury, and, left alone, might remain undelivered for hours, nay, for days. The manipulation which Schroeder employed was to place the side of the hand in the furrow underneath the uterine body, and then to exert a gentle pressure downward. As this procedure requires a good deal of practice and skill, Schroeder recommends subsequently the gentle pressure of the fundus uteri down into the superior strait. As Cohn remarks, the contracted uterine body acts like the piston of a syringe, which drives everything movable before it. This method of Schroeder I have found perfectly satisfactory in practice, and would urgently recommend its general adoption. The method of Credè I would reserve for the cases in which the placenta does not become detached, or those in which it has been separated in the way described by Duncan, and consequently has remained with the upper edge fixed in the uterine body. When there is some obstacle which prevents the placenta from escaping completely out of the uterine body, as, for example, might occur when a very large placenta had to pass through a moderately contracted "ring of contraction," this method would be indicated. I concur entirely in the views expressed by Credè in regard to the inocuousness of the membranes of the ovum and decidua when retained in the uterine cavity, provided the conduct of the labor has been aseptic.

ELECTRICITY VS. LAPAROTOMY IN INFLAMMATORY AFFECTIONS OF THE UTERINE APPENDAGES.

By Egbert H. Grandin, M.D., New York.

N. Y. Med. Record, August 25.—The class of cases in which I would contend electricity will prove as serviceable, and frequently more so than laparotomy, and this, too, without subjecting the woman to the slightest risk, are those in which careful exploration, if necessary under anæsthesia, fails to suggest the presence of pyosalpinx. Disease of this nature calls for speedy and radical action. The knife is here indicated, even as it is in any other region of the body where pus is predicated. A history of recurrent attacks of pelvic peritonitis should constitute the call for laparotomy, lest the next attack should eventuate in a general peritonitis, fatal to the patient. Where, however, the careful bimanual exploration of the patient, the rational history and the appearance do not suggest the likelihood of pyo-salpingitis, then the greatest palliation, if not entire cure, may be predicted from resort to electricity. The conditions termed catarrhal salpingitis, pachy-salpingitis, peri-salpingitis, peri-oöphoritis, I would include in the class which may properly be subjected to electricity rather than to the knife.

When I first began systematically to use electricity in my gynæcological practice, I deemed it contraindicated in acute pelvic peritonitis—the term under which, for the sake of brevity, I would include the affections just referred to—and to be used with caution in sub-acute instances. With increased experience I have learned that the agent may not alone be resorted to with safety, but with benefit as well, where the condition is acute. By means of electricity the circulation is regulated, absorption is favored and we effectively counter-irritate. The technique of the application I have so recently described that it is unnecessary here to do more than lay stress on certain of the cardinal principles. Notwithstanding the advocacy of Apostoli, Engelmann and others, I am not convinced that it is all essential to success to use currents of great intensity. Indeed, in certain instances I am satisfied that I obtain greater benefit through resort to weak currents of considerable duration. The action of the currents is thus more prolonged, and the effect more lasting. The non-active pole, and this will ordinary be the negative pole, should cover as large a sur-

face as possible, the abdomen being the preferable site for the application. As long as there exists tenderness on pressing the vaginal vault, or pain in imparting motion to the uterus, galvanism is indicated, the positive—the anæsthetic, alterative pole being placed within the vagina. When the symptoms have disappeared, faradization, first the primary current, and later the secondary, will be found most effectual in completing the cure, in so far as this is possible. In the intervals between the séances, and these should be held every other day at the outset, the uterus should be gently supported by a wool tampon—the organ should not be crowded up by a number of tampons packed as solidly as possible into the vagina, for thus as much harm is done to the ligaments, blood-vessels and adjacent organs in an upward direction as they suffer when, without the tampon, the uterus sags downward.

ENLARGED PROSTATE GLAND—TREATED BY ASPIRATION.

The patient was æt. 70; had had enlarged prostate with usual symptoms, for three years, using a catheter meanwhile. On a certain occasion Dr. Rockford was sent for in haste, and says:

I took my aspirator, expecting to use it at once. I found him delirious, and chock-full of water. I did not attempt to introduce a catheter, but used the inspirator at once. I drew nearly a gallon of water from him, and, after having drawn the water, as it smelled very bad, I thought it would be a good plan to wash out and disinfect. I used an ounce of Listerine (Lambert's) to a pint of warm water. I pumped that into the bladder, and let it remain a short time, and then drew it off. May 20, just twenty-four hours afterward, I again used the aspirator after unsuccessfully attempting to use catheters. So I used the aspirator fourteen times before the catheter could be used, but I enjoined the nurse to let him have but little fluids. I had the bowels moved freely with salts, and also had injections of tepid water. Also had him to take hot sitzbaths, which he said felt so comfortable to him. After having used the aspirator fourteen times, and washing out the bladder each time with hot water and Listerne, he is now able to use the catheter again himself. But I have him—after having drawn the urine—to attach the aspirator and and wash the bladder out, still using tepid water and Listerne. I used the needle fourteen times within a space of a silver quarter, and had little or no swelling to follow. In fact, they healed up like pin scratches.—*Dr. A. P. Rockford in Cincin. Lancet Clin.*

A physician is much sooner in demand if he has wealth than if he has only learning and skill.

EXTERNAL PRESSURE AS AN AID TO PARTURITION.

By Oliver S. Andrews, M.D., Millford, Mass.

Mass. Med. Jour., August.—An article which appeared not long since, showing by the detailed history of several cases the valuable aid derived from the external application of cold water as an oxytoxic, recalled to my mind the fact that I have seen very little in the literature of our profession of late with regard to another agent upon which I have confidently relied in all cases of labor protracted by uterine inertia, for the past year or more; and it is one which has never failed to arouse the lazy uterus to a proper and active performance of its parturient functions.

The agent I allude to is pressure with the open hand or hands properly applied to the part of the abdominal wall corresponding to the fundus of the uterus. Most of the text books with which I am familiar are either silent upon the subject, or they give it a mere passing notice. Can it be that their authors were unacquainted with its marvelous efficacy?

The causes which trammel and impede the gravid uterus in its efforts to expel its contents are varied, and are often of so complex and serious a nature as to demand prompt and energetic medical, and it may be surgical, interference for their removal, and that being accomplished, the womb will at once resume its normal activity, and the case proceed to a successful and happy termination. But these are delays which seem to be owing to no appreciable lesion, and it is in these cases that the agent with which I have headed this article acts so satisfactorily.

Ergot has been, and is still, relied upon by practitioners as the motive power to draw them and their patient out of the obstetrical [illegible]e into which they have fallen, and it will often succeed, but generally at the expense of the fœtus, whose life is often lost in the struggle. In my earliest obstetrical teachings my mind was awakened to the direful effect of this drug, and in all my practice I have administered it but once as a parturient, and then the life of the fœtus was believed to be extinct.

I have repeatedly prescribed morphia to compose the patient, when she was being harassed by spurious labor pains, with the happiest effect. I have administered it to travailing women, whose sufferings had almost exhausted their vital powers, and by temporarily relieving the pain, sleep, calm, refreshing sleep, would be followed by rapid delivery. But morphia has been known to do harm, and if danger to mother or child should be heralded, we cannot remove the offending cause when it is operating from within as we can a mechanical agent operating from without.

Now I seldom use anything but pressure. As soon as I find the uterus relaxing its expulsive

efforts and spurious pains setting in, I at once apply my hand or hands, and all is soon put to right; the spurious pains are checked; the womb is aroused; true labor pains are brought to work, and soon the wail of the new-born falls like sweetest music upon the ears of the hard-wrought mother and anxiously listening father.

I shall not attempt to give the *rationale* of the action of the pressure. I leave that to be explained by some of my more erudite brothers. I can hardly believe that it is pressure alone which gives such a happy result, as it has been confidently asserted that the combined force which is brought to bear upon the fœtus in utero in order to accomplish the act of parturition amounts to a little over 500 pounds. Hence, I can hardly believe that such a great thing could be consummated by the comparatively slight additional pressure imparted by the hand of the accoucheur.

PEDUNCULATED PAPILLOMA OF THE BLADDER.—SUCCESSFUL REMOVAL BY PERINEAL OPERATION.

E. B., thirty-seven years of age, was alarmed three years since by a very profuse hemorrhage into the bladder. The urine, he said, was black with blood. This condition came on without any apparent cause. Ever since he has had intermittent attacks of hæmaturia. The urine sometimes has remained free from blood for several weeks at a time. Until very recently urination has been painless and natural as to frequency. He has had two or three attacks of retention due to the presence of clots in the bladder. He has often passed large clots, but never any fleshy bits until within a fortnight. He has lost about seventeen pounds weight during the last three years, but is still strong and in very good condition.

The urine at the time of his first visit contained bright blood in moderate quantity. Some pus, two or three small phosphatic concretions, which he had noticed for the first time in the preceding day or two, and a good many small shreds, which, microscopically, were seen to be the most typical examples of a benign papillomatous growth.

Rectal examination gave a slightly greater sense of resistance of the bladder wall to the finger over a small area just above the right lobe of the prostate. There was also tenderness on pressure at the same point. This was interesting to me, as it has been generally stated that unless cancerous these growths could not be detected by touch in the rectum. Nevertheless, I have been able to locate the growth exactly previous to operation in this case, and in one which I operated upon by the supra pubic method last summer by rectal touch. In the former case the growth was small and delicate. Dr. Cabot confirmed the observation in that instance. Bimanual examination was negative.

On April 23, with assistance of Drs. J. W. Elliot, H. W. Cushing and R. Lovett, I performed the principal perineal operation. Hemorrhage was free during the operation. The bladder was washed out with a hot solution of boracic acid four per cent.; and this perineal drainage-tube (of which I will speak in a moment), was tied into the bladder. The operation was long and tedious. The patient had delayed reaction, the pulse being very weak and 120 for twenty-four hours afterward. Bleeding continued to be steady and free for twenty-four hours, then gradually diminished, ceasing entirely on the third day. Vesical tenesmus was frequent and severe for twenty-four hours, due to large clots plugging the orifice of the tube. Throwing an ounce or two of boracic solution into the bladder dislodged them, and relieved the patient at once until another one came into the tube.

Since the first twenty-four hours this patient has declared that he never felt better in his life. There was no rise of temperature, except for a few hours one week from the date of operation, due to a slight epidydimitis. I removed the perineal drain on the fourth day. He was moved from bed to couch on the fifth day. The urine is entirely free from blood, and only contains a very little pus, which comes from the prostatic urethra. Frequency of urination, once in four or five hours; and he can hold it all night. The perineal wound is nearly healed, and recovery may be said to have practically taken place in ten days from the date of operation.

Three months have elapsed since reporting this case, and at this date of publication the patient is entirely free from all symptoms, and perfectly well.—*Dr. F. S. Watson in Bost. Med. and Surg. Jour.*

ENEMATA; THEIR ORIGIN AND THE METHOD OF ADMINISTERING THEM.

No one who has been accustomed in important cases to superintend in person the administration of enemata, can well realize the beneficent potency of the remedy in many a fearful crisis with the sick. Ignoble as some esteem the service, there is always room for the display of tact and skill, and often demand the greatest coolness and judgment to rescue life in imminently impending danger. The carelessness with which an enema is too often ordered at the hands of an ignorant nurse; the indifference manifested as to its composition, its temperature, its bulk, and it manner of exhibition, evidences not only want of care for the comfort and health of the patient, but positive ignorance of the power invoked in its capabilities for good or harm. It is questionable whether a student of medicine ought to receive his diploma until he

has demonstrated clinically his capacity to prepare and administer the ordinary enema *secundum artem*.

In the admistration of enemata in general, a few rules are to be observed, and first, the hands should be well washed with soap, to soften them and insure their entire cleanliness in this, as in all manipulations about the openings of the body. The preparation of the enema may ordinarily made in a bowl or pan, and the syringe (a modern one) is to be operated for a few moments, throwing the fluid back into the bowl, until all air is expelled from the instrument; leaving the rectal tube beneath the surface to prevent ingress of air.

For convenience of administration the patient may be placed upon the left side with the back near the edge of the bed, the knees drawn up, and the body and limbs covered with the usual bedclothing. No one can consider himself a master of the art, who is not prepared at all times to administer an enema successfully in any position the patient may assume. To uncover a patient for this service is incompatible with the self-respect of the physician, patient and nurse. It is an inexcusable barbarism, which is chargeable with much of the disgust so commonly felt for this valuable form of medication.

These preliminaries having been arranged, the administrator seats himself at the bedside with the bowl conveniently at hand; anoints the forefinger of the right hand with oil or lard, and placing the tip of the finger in the sulcus of the nates adjacent to the coccyx, draws it forward upon the perineum until the anus is felt, when the entire first joint of the finger is gently passed into that opening. Taking now the rectal tube of the syringe in the left hand, and directing its point strongly upon the engaged finger, pass the tube slowly into the rectum, withdrawing at the same time the finger as the tube passes in. This manipulation, with practice, is executed rapidly and certainly, and without pain or even discomfort to the subject.

It should always be observed, and especially in the male, that the rectal tube after passing the sphincter muscle, is directed backward and upward in the axis of the canal, that the point may not press painfully upon the prostrate gland, or uterus, as the case may be. If the old-fashioned pewter syringe is used, when in proper position, its directtion will be upward and backward, toward the sacrum, not in a line with the axis of the body: much less upward and forward toward the bladder, as one may too often see.

If a small syringe is to be used, the manipulation is the same, and the use of the finger as a guide is even more important, since the passage of a small pipe into the rectum is both difficult and painful without such a guide, whilst no pain is given when the point of the pipe presses only upon the finger of the operator.

For the present purpose enemata may be conveniently classified as follows: 1. Purgative. 2. Emolient. 3. Anodyne. 4. Refrigerant. 5. Styptic. 6. Distensile. 7. Exciting. 8. Relaxing. 9. Nutritive. Each is described.—*Dr. Legare in Mass. Med. Jour.*

PELVIC CELLULITIES IN THE MALE.

In a recent number of the *Tidsskrift for Practisk Medecin* Dr. Skjeldrup describes a case of pelvic cellulitus in a man fifty years old. The first symptoms in this case were vomiting, flatulence, constipation, abdominal tenderness, and tympanites. There was some pain over the cæcum, and resistance on palpation and dullness on percussion at the same point. Examination per rectum showed a tolerably hard tumor situated in the left hypogastrium; it was easily felt by bimanual palpation. An aperient was given, with quinine and iodide of potassium, and wet compresses over the abdomen; for some days. The patient did not improve, the abdominal pain and distension became greater, the difficulty of passing flatus and faeces increased, and the patient was becoming more and more emaciated. An œsophageal tube was passed up to the sigmoid flexture, and a warm enema given producing a scanty evacuation. The tube was bent by the tumor, which displaced the gut backwards. The enema was repeated two days later, resulting in the copious evacuation of foul smelling fæces. The patient then began to improve, and after a few more injections fæces were passed naturally. At the end of a month there seemed to be but a slight infiltration anterior to the rectum. The tumor, while it existed, was of an irregular shape, and sometimes appeared to be firm, elastic and tender. In 1885 Dr. Muir, of Selkirk, published a case of pelvic cellulitus in the male.—*Jour. Am. Med. Assoc.*

The Perils of Medical Men in Russia.—The physician in Russia has not only to suffer from exposure to disease and from the malice of dissatisfied patients, but he sometimes also feels the reproving hand of his paternal government. Recently a Dr. Dreipolkher, an official connected with the hospitals of St. Petersburg, was requested to obtain admission to one of the hospitals for a sick woman. He sent her to several in turn, but they were all full and could not receive her, and she died in consequence of the exposure to the cold. The government thereupon banished Dr. Dreipolkher to the Artic regions of Archangel, probably with a view of making the punishment fit the crime, although the poor man had done his best to obtain shelter and medical care for the woman.

Dr. Paul Langerhans, of Freiburg, has recently died in Funchal, Madiera, of pulmonary tuberculosis. He was aged forty.

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MONTREAL, OCTOBER, 1888.

NOT ENOUGH WATER.

A good deal of very much needed attention is being paid, by those who devote themselves specially to the subject of diatetics, to the common error made by so many of not drinking enough water to supply the wants of the system. When we think of the quantity of fluid exhaled by the lungs, and secreted by the skin and kidneys, we may wonder how people can get along at all without drinking water. It is true that in most cases a good deal of water is taken with the various forms of food; but at the same time we think that the majority of people take too little water. It is becoming generally recognized that what we call rheumatism and gout, as well as gravel and stone, might be prevented, or their evils mitigated, by flushing out the kidneys frequently by taking large quantities of either pure or alcalized water. Sir Henry Thompson's work on "The Preventive Treatment of Calculous Diseases and the Use of Solvent Remedies" has reached its third edition.

During a visit which we recently paid to a large sanitarium at Battle Creek, we noticed that water entered largely into the treatment, both internally and externally, and we had an opportunity of observing for ourselves in the laboratory there that uric acid and the urates almost disappeared from the urine generally within three days. In our own practice we have made it a rule for some years past to order our patients to drink two or three tumblers of water (hot preferred) every night whenever their urine deposited "brick dust" on cooling. It is a fact which must have been observed by every one that the urine of rheumatic subjects is always loaded with urates, and we very much suspect that a great deal of the benefit derived by such patients from drinking the waters at the various springs is in large part due to the quantity of fluid of which they there partake. In some cases the same quantity of water ingested at home would have just as well effected the cure.

THE USE AND ABUSE OF MILK.

It was Fothergill, we think, who first called attention to the abuse of milk as an article of food, or rather we should say, to using it as a beverage instead of as a food. The truth of his views on this subject have lately been forcibly demonstrated to us in the persons of several cases of acute rheumatism. They had all been large drinkers of milk and their temperatures were over 103, and the pain was excessively severe when they came under treatment. By putting them on a diet of thin water gruel, suitably flavored, and a mixture containing ten grains of salicylate of soda, to be taken in half a tumbler of weak lemonade every two hours until relieved, in every case the symptoms had almost disappeared within thirty-six hours; and the urine which had been dark and loaded at the same time became clear. It seems to us that in rheumatic cases the blood is in a condition of saturation with water, coming from the defective combustion of nitrogenus food which ought to, but does not, reach the ultimate stage of urea, and it only requires a local slowing of the circulation, or a temporary cooling of an extremity, in order to have a deposit of the sharp pointed crystals in the joints, ligaments or muscles,

which causes such excruciating pain. It is a fact proved by experiment that certain articles of diet increase the excretion of uric acid: these are milk, cheese, meat and beer, the latter acting probably by preventing other food from being burned, as it burns much easier than they. Some great medical authority of the old school once said that the best cure for rheumatic fever was six weeks in bed, and as the patient was generally put on an exclusively milk diet, that may perhaps have been the explanation.

The idea is general among people that the more milk they could drink the better for their health; and so they drink two or three tumblersful of milk as though it were water. The moral of all this is that though milk is one of the best and most nutritious of foods, being indeed the only perfect food, it is the worst possible beverage, being already saturated, and therefore being utterly useless for the purpose of washing out effete matter from the blood

GOING TO SLEEP IN CHURCH.

To fall asleep during Divine service in the house of God is considered by most persons as not only a breach of etiquette, but a proof of great lack of spiritual fervor and want of faith. To snore in church might even give rise to a public scandal. Certainly, the preacher would look upon the drowsiness of his congregation as an obvious reflection on his oratorical powers and on his ability to rivet their attention. Indeed, a story is told of a celebrated, but somewhat eccentric, divine in Scotland becoming so annoyed at the persistent sleepiness of one of his parishioners, seated just under the pulpit, that he lost his temper and threw down upon the offender's head a heavy Bible, with the remark: "If ye will na hear the Word, a'll mak' ye feel it." And yet neither the minister nor people are to blame for this sign of weakness. In many cases the poor sinner is merely succumbing to the first stage of asphyxia, which it is useless for him to try to resist beyond a certain point. When he snores he is becoming narcotized by carbonic acid gas. Our English contemporary, the *Medical Press*, calls attention editorially to the defective ventilation of many churches, especially of those in which several services are held on the one day, without any opportunity being afforded to renew the air When we consider that every adult human being requires 3,000 cubic feet of air per hour, we need hardly ask the question whether the average congregation usually gets that amount.

And yet it could be easily enough obtained. It is only a matter of a little expense, and that might be provided for by setting aside one or two collections every year for the purpose of forming a Fresh Air Fund.

THE FRESH AIR FUND.

Speaking of fresh air funds, it is not only a pleasure, but a duty for us, as medical journalists, to record our approval and appreciation of the good work now being done every summer by the Citizens' Fresh Air Fund among the half-suffocated mothers and children of the poor. We feel sure that the money so spent will prove so much the less to be spent on hospitals. In fact, the fresh air should bear the same relation to hospital treatment that an ounce of prevention does to a pound of cure.

FIRST TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

This Congress consisted of eleven medical organizations, which met this year, and for the first time, on the same date and at the same place, viz., on the 18th, 19th and 20th September in the city of Washington. Each special association held three morning and three afternoon sessions in its separate buildings, while four evenings were devoted to the Congress as a body. On the first night a very costly, but, from all accounts,

a very badly served, dinner was held at Willard's Hotel, at which there were many distinguished guests. On the second night there was a magnificent discussion on intestinal obstruction in its medical and surgical relations, and which was opened by Reginald Fitz, of Boston, and continued by Nicholas Senn, Wm. Pepper, W. H. Draper, J. Collins Warren and others. The third evening was devoted to cerebral localization in its practical relations, papers being read by Chas. K. Mills, of Philadelphia, and Roswell Park, of Buffalo, while a fine discussion followed by David Ferrier (who created cerebral localization as far as English medicine is concerned), David Horsley, M. A. Stan, W. W. Keen and others. Dr. Ferrier's figure is rather below than above the medium size, and with his well trimmed moustache and side-whiskers, reminds one of a smart business man rather than of a great physiological experimenter. Of Victor Horsley, the *Medical Times* correspondent says: "One of the most interesting figures of the meeting was Mr. Victor Horsley. Every one was anxious to see the man whose exploits in cerebro-spinal surgery had attracted so much remark within the last two years. He is a thoughtful-looking young man, with deepset eyes and dark hair and moustache. In conversation he is very agreeable, and his quiet and modest demeanor at the discussion on cerebral localization secured him the careful attention of all present." The fourth and last evening was devoted to an address by the President of the Congress, Dr. Billings, on medical museums, which was listened to by a brilliant gathering of the members of the Congress and their wives and daughters, which afterwards adjourned to the elegant establishment of the Army Medical Museum, where the guests were received by Dr. and Mrs. Billings, Prof. Von Esmarch and the Princess of Schleswick-Holstein, his wife, Dr. and Mrs. Busey and others.

The President of the United States and Mrs. Cleveland, with their usual urbanity, held a special reception on Wednesday afternoon at the White House. Judging from the hearty manner in which Grover grasped the hand of the Canadian contingent, nothing could make us believe that there is such a thing as retaliation in his heart. No! He has been imposed upon by some of his wily and unscrupulous political advisers to resort to this party exigency. Mrs. Cleveland's right arm continues to develop, owing to the many hundred thousand contractions its muscles make in the course of a year. Just fancy! Shaking hands with 8,000 people in one night, and every one getting from one to three *bona fide* shakes. One of the Washington society journals recently reported that she was now obliged to have a special glove for her right hand two sizes larger than the left. The Canadian guests were received with especial marks of courtesy, Dr. Hingston, as the senior Canadian present, coming in for a large share of professional and social attention.

The Montreal contingent consisted of Drs. Hingston, George Ross, Wilkins, J. C. Cameron, Lapthorn Smith, Blackader, Shepherd, Alloway and Bell.

As an instance of American enterprise we might mention that the *New York Medical Record* had a regularly engaged staff of eleven reporters, who every evening handed in an abstract of all that transpired in the sections. These reports were forwarded to New York the same night, and were in type next day, the complete account of the Congress appearing in the Saturday number of the same week.

NOTICES OF BOOKS.

Disinfection and Disinfectants.—New Application and Use in the Prevention and Treatment of Disease and in Public and Private Sanitation. By the Committee on Disinfectants of the American Public Health Association.

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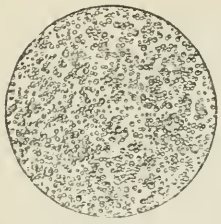

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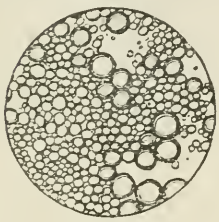

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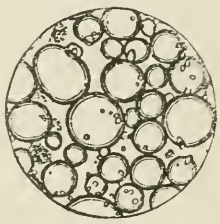

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Fig. 1.

Fig 5.

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